

## **SPECIFICATION**

### **TITLE**

Methods for forming a hanger for a chain link fence

### **PARENT CASE TEXT**

This application is based on and claims priority to the United States Provisional Application No. 60/404,309 filed 8/19/2002.

### **FEDERALLY SPONSORED RESEARCH**

The proposed invention was not federally sponsored research and development.

### **DESCRIPTION**

### **TECHNICAL FIELD**

The present invention relates generally to transportable, detachable, hangers and hooks more particularly, for use in conjunction with chain link fences and for constructing such hangers.

## **DESCRIPTION OF RELATED ART**

US PAT. NO. 5,509,632, issued to Mesna et al on April 23 1996, describes a method for forming a hook for a chain link fence. The hook is L-Shaped similar to the proposed invention and connects to the wire portions of the chain link fence as does the related art. The interconnection point of the related art is along the 45 degree wire portion of the chain link fence. The proposed invention interconnects at the bottom of the diamond pattern of the 45 degree wire portion via staggered notches, a more advantageous location. This is a superior interconnection method due to the staggered notches providing secure interconnection. The proposed invention holds more weight in the vertical axis because of this notched attachment method. The related art is not stable in the horizontal axis, and is limited to weight bearing due to the 45 degree interconnection method.

## **BACKGROUND ART**

Chain link fences have become a commonplace at sports complexes, back yards, and tennis courts. Such fences provide an excellent structure for hanging sports equipment, hardware, construction equipment, lights, and other items for

convenience. A desirable article would be a small hanger, constructed and arranged to be used in conjunction with the fence, quickly employed and deployed, reusable, sturdy, and easily carried.

## **DISCLOSURE OF INVENTION**

The invention includes a method of constructing a hanger comprising the steps of bending a flat metal strap along first fold line at a 90 degree angle to form a first element and the front edge of the flat fold portion and bending along second fold line at a 90 degree angle to form the back edge of the flat fold portion and top edge of the second element, and notching the flat fold portion providing fit and function with the wire pattern of the chain link fence.

The hanger of the invention is removably engagable with the interior diamond wire pattern of the chain link fence. Being small and lightweight, the hanger is easily transported and stored. Hanger use ranges from suspension of sports equipment off of backstops to hanging planter boxes on backyard fences. One embodiment provides a baseball bat and helmet hanger.

## **BRIEF DESCRIPTION OF THE DRAWINGS**

### **DESCRIPTION FIGURE 1:**

Figure 1 is a side elevational view of the hanger showing the flat fold portion and first and second elements;

**DESCRIPTION FIGURE 2:**

Figure 2 is a top plan view of the hanger showing the staggered notches in the flat fold portion;

**DESCRIPTION FIGURE 3:**

Figure 3 is an elevational view of the hanger;

**DESCRIPTION FIGURE 4:**

Figure 4 is a front view of the hanger illustrating one embodiment of the hanger removably attachable to the chain link fence allowing for any item or assembly to be pop riveted to the second element.

**DESCRIPTION FIGURE 5:**

Figure 5 is a perspective view of one embodiment having two interconnection holes in the second element demonstrating use in conjunction with a portion of chain link fence.

**DESCRIPTION FIGURE 6:**

Figure 6 is a perspective view of another embodiment having a key hole interconnection method integrated in the second element demonstrating use in conjunction with a portion of chain link fence.

**DESCRIPTION FIGURE 7:**

Figure 7 is a perspective view of another embodiment having hanging devices cut out and formed from the second element, demonstrating use in conjunction with a portion of chain link fence.

**DESCRIPTION FIGURE 8:**

Figure 8 is a perspective view of another embodiment having a cylindrically shaped hanging devices cut out and formed from the second element, demonstrating use in conjunction with a portion of chain link fence.

**DESCRIPTION FIGURE 9:**

Figure 9 is a perspective view of another embodiment having a rectangular in shape hanging devices cut out and formed from the second element, demonstrating use in conjunction with a portion of chain link fence.

**CLAIMS**

What is claimed is:

1. A hook apparatus adapted for use on a chain link fence constructed and arranged as follows:
  - A first element, vertically disposed, having two oppositely located end portions;
  - A second element, vertically disposed, integral with first said element and extending from the top one of the said two oppositely located end portions of said first element and disposed with said first element in an L-shape before said first and second elements are folded relative to one another and disposed with said first element in a generally parallel configuration after being folded;
  - Said first and second elements being separated by approximately 1.125 inches in their folded position;

- A flat fold portion connecting said first and second elements when said first and second elements are in their folded disposition, said fold portion being disposed perpendicular relative to a vertical reference and perpendicular to both first and second elements;
- Said flat fold portion having opposing staggered notches on the anterior side edge of said flat fold portion,
- Said staggered notches having first notch centered approximately .431 inches from the union of the first element and the flat fold portion and second notch centered approximately .431 inches from the union of the second element and the flat fold portion, both notches having an internal radius of approximately .156 inches;
- Said staggered notches and notch radius enhance engagement of the wire portions of the chain link fence at the bottom of the diamond pattern with said flat fold portion after said wire portion passes between first and second elements and the wire portions, securely fitting into first and second notches filling the notch radius;
- Said second element being integral with said other elements and extending away from flat fold portion, configured and arranged for supporting various articles suspended therefrom; and
- Said elements having generally constant width of approximately .220 inches.

2. The hook apparatus as claimed in claim 1 wherein:

- Said second element having a slotted key hole centered in the second element.
3. The hook apparatus as claimed in claim 1 wherein:
    - Said Second element comprises a flat portion extending outwardly from said second element at an angle of approximately 90 degrees, said flat portion being bifurcated into two prongs having a distance between said prongs of approximately the diameter of the handle of a baseball bat.
  4. The hook apparatus as claimed in claim 3 wherein:
    - Said second element includes a vertical flap at the end of each of said prongs, said flap extending approximately .25 inches at an angle of approximately 90 degrees.
  5. A hook apparatus as claimed in claim 1 wherein:
    - Said second element comprises a straight flat fold portion extending at an angle of approximately 145 degrees from the second element.
  6. A hook apparatus as claimed in claim 1 wherein:
    - Said second element comprises a straight flat fold portion, said second element having two mounting holes positioned along the center line of said second element positioned vertically one on top of another.
  7. A hook apparatus as claimed in claim 1 wherein:

- Said second element comprises a rounded curve portion having a radius of approximately .5 inches extending outward from said second element forming a quarter circle shape before terminating approximately .33 inches from said second element.
8. The hook apparatus as claimed in claim 1 wherein:
- Said second element comprises a flat portion extending outwardly from said second element at an angle of approximately 90 degrees, said flat portion being flat and having a width of approximately one third of the width of the second element.
9. The hook apparatus as claimed in claim 8 wherein:
- Said second element includes a vertical flap at the end of the outwardly extending flat portion, said flap extending approximately .25 inches at an angle of approximately 90 degrees.

#### **BEST MODES FOR CARRYING OUT THE INVENTION**

Referring to the drawings wherein like numerals and descriptions represent like elements throughout, FIG. 3 depicts the hook of the present invention comprises three portions: a first element, a flat fold portion, and a second element. First and second elements are parallel to one another and



vertically disposed, and interconnected to one another by a horizontally disposed flat fold portion having anterior edges notched.

Referring to FIG. 5 depicts one embodiment of the hook removably engaged with a portion of chain link fence having first element engaged with the back side intersecting wire elements, having flat fold portion engaged with the top side of intersecting wire elements with intersecting wire elements fitting into the notches of said flat fold portion, and having second element engaged with the front side intersecting wire elements as shown in FIG. 5, the chain link fence portion comprising of two wire elements having a perpendicular interconnecting point of intersection. Such chain link fences are well-known.

Referring to the flat fold portion depicted in Fig. 3, the notches located on the anterior edge of the flat fold portion are constructed and arranged to match diameter and spacing of the wire pattern of the well-known chain link fence providing secure union between the notches and wire permitting stable engagement of the embodiment to chain link fence.

In the embodiment depicted in Fig. 4 the second element is constructed and arranged to readily allow engagement to various hanger devices via the two through holes aligned with the vertical axis of the second element.

It is anticipated that the embodiment of the invention in Fig. 1-5 of the present invention may be used to suspend various articles from the second element via the two vertically aligned holes.

It is anticipated that the second element depicted in Fig. 1-5 of the present invention can be constructed and arranged in different shapes, lengths, and

protrusions allowing for the suspension of sports equipment, outdoor lighting, construction equipment, and signage from chain link fence.

Figures 6-9 demonstrate various alternative embodiments of the invention utilizing various methods for suspending articles from the invention.

The hook is made from a flat piece of heavy gauge metal, such as cold roll steel and either powder coated, plated, or vinyl dipped. However, the particular medium of construction is not critical to the practice of the invention, so long as the medium is rigid enough for the intended purpose of the embodiment of the hook. Other suitable mediums for construction such as plastic or metal would be suitable for the practice of this invention.

It is anticipated the present invention may be coated with distinctive color, logos, numbers, and embossing for association with desirable affiliations.

## **INDUSTRIAL APPLICABILITY**

The expected use of the present invention is for the temporary suspension of articles from chain link fence.

The present invention has been disclosed as a hook for temporarily suspending articles from chain link fence. Those skilled in this art will find it readily apparent that various alterations and modifications of an obvious nature may be made without departing from the spirit of the invention that lies within the unique notched engagement method, and all such alterations and modifications fall within the scope of the appended claims.